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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,445	09/26/2003	Itzhak Smocha	MERCURY.131C1	8451

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EXAMINER

Barbee, Manuel L

ART UNIT	PAPER NUMBER
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2857

DATE MAILED: 05/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/672,445	Applicant(s) SMOCHA ET AL.	
	Examiner Manuel L. Barbee	Art Unit 2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24, 27-45 and 47-61 is/are rejected.
- 7) ☒ Claim(s) 25, 26 and 46 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10-23-03; 9-26-03</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 5, 7, 8, 10-12, 14-24, 27, 31, 34-36, 42-45, 48-54, 56, 57 and 60 are rejected under 35 U.S.C. 102(e) as being anticipated by McGee (US Patent No. 6,643,613).

With regard to monitoring a first performance metric and a second performance metric of a server over a period of time, as shown in claim 1, McGee et al. teach monitoring performance metrics of a server over a period of time (col. 5, line 66 - col. 6, line 52). With regard to measuring a degree to which two performance metrics are related by calculating a correlation coefficient between the two series of values for the performance metrics, as shown in claim 1, McGee teaches calculating a correlation coefficient between two measured performance metrics (col. 6, lines 53-64, col. 7, lines 7-15; col. 20, line 52 - col. 22, line 2).

With regard to monitoring a plurality of performance metrics over a period of time, as shown in claim 16, McGee et al. teach monitoring performance metrics (col. 5, line 66 - col. 6, line 52). With regard to performing a sampling analysis on the collection of

performance metric data to identify a significant portion, as shown in claim 16, McGee et al. teach performing statistical analysis to determine whether the data set is normally distributed or normalizable (col. 8, line 48 - col. 9, line 31). With regard to analyzing the data to determine the degree to which a pair of metrics are correlated, as shown in claim 16, McGee et al. teach calculating a correlation coefficient between two measured performance metrics (col. 7, lines 7-15).

With regard to a data collection component, as shown in claim 36, McGee et al. teach collecting performance metrics (col. 5, line 66 - col. 6, line 52). With regard to an analysis component that analyses data to generate a correlation coefficient for pairs of performance metrics, as shown in claim, 36, McGee et al. teach calculating a correlation coefficient between two measured performance metrics (col. 7, lines 7-15).

With regard to a data collection component, as shown in claim 48, McGee et al. teach collecting performance metrics (col. 5, line 66 - col. 6, line 52). With regard to an analysis component that analyses data to generate a correlation coefficient for pairs of performance metrics, as shown in claim, 48, McGee et al. teach calculating a correlation coefficient between two measured performance metrics (col. 7, lines 7-15).

With regard to comparing the correlation coefficient to a lower threshold to evaluate whether two metrics are to be treated as unrelated, as shown in claim 5, McGee et al. teach deleting correlation coefficients below a predetermined threshold (col. 3, line 64 - col. 4, line 11; col. 23, lines 1-20). With regard to compensating for time offset between series of values of performance metrics by identifying offset transition points, as shown in claims 7, 8, 31, 42 and 56, McGee et al. teach aligning data in time

slots (col. 20, lines 25-39). With regard to the performance metric being server response time, current load on the server or server transactions per unit time, as shown in claims 10-12, 18, 19, 45 and 60, McGee et al. teach measuring response time, utilization and transaction rate (col. 6, lines 11-22).

With regard to a computer system or computer program to perform the method analyzing server performance, as shown in claims 14, 15, 34 and 35 McGee teaches a computer program to perform the functions taught (col. 25, lines 49-64).

With regard to storing the performance metric data with a time index, as shown in claims 17, 44 and 49, McGee et al. teach storing a time with the data collected (col. 20, lines 25-39; Fig. 15). With regard to a separate sampling analysis for each performance metric, as shown in claims 20 and 50, McGee et al. teach performing statistical analysis to determine whether the data set is normally distributed or normalizable (col. 8, line 48 - col. 9, line 31). With regard to evaluating whether the collected performance metric data exhibit a statistically significant trend, as shown in claims 21 and 51, McGee et al. teach setting thresholds to be sensitive to long term changes (col. 9, line 18 - col. 10, line 30). With regard to determining whether a performance metric is uninformative, as shown in claims 22 and 52, McGee et al. teach performing statistical analysis to determine whether the data set is normally distributed or normalizable (col. 8, line 48 - col. 9, line 31). With regard to determining whether a sufficient number of data values have been collected for a statistically significant analysis, as shown in claims 23 and 53, McGee et al. teach checking for gaps in the data and deleting data sets that are incomplete (col. 20, lines 25-39). With regard to identifying at least one segment for

which data values are sufficient for performing a meaningful analysis, as shown in claims 24 and 54, McGee et al teach identifying a data set that can be correlated (col. 20, line 12 - col. 21, line 52).

With regard to calculating a correlation coefficient for a pair of performance metrics, as shown in claims 27 and 57, McGee teaches calculating a correlation coefficient between two measured performance metrics (col. 6, lines 53-64, col. 7, lines 7-15; col. 20, line 52 - col. 22, line 2). With regard to performing a sampling analysis on the collection of performance metric data to identify a significant portion, as shown in claim 43, McGee et al. teach performing statistical analysis to determine whether the data set is normally distributed or normalizable (col. 8, line 48 - col. 9, line 31).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 3, 28, 29, 38, 39 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over McGee in view of the Mathematics Dictionary (D. Van Norstrand Company, Inc., 1960).

McGee et al. teach all the limitations of claim 1 upon which claims 2 and 3 depend, claim 16 upon which claims 28 and 29 depend, claim 36 upon which claims 38 and 39 depend and claim 48 upon which claim 58 depends. McGee et al. do not teach

that the correlation coefficient is a Pearson correlation coefficient, as shown in claims 2, 28, 38 and 58, or that the correlation coefficient is a coefficient of determination, as shown in claims 3, 29 and 39. The Mathematics Dictionary teaches that a correlation coefficient is a Pearson's coefficient (page 57). The Examiner takes official notice that a coefficient of determination is well known. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system for monitoring performance metrics, as taught by McGee et al., to include the Pearson's coefficient, as taught by the Mathematics Dictionary, because then a well known way for determining the degree of linear relationship between two sets of numbers would have been used (Mathematics Dictionary, page 57). It would further have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system for monitoring performance metrics, as taught by McGee et al., to include a coefficient of determination, because then an alternate method for determining the relationship between two sets of numbers would have been available.

5. Claims 4, 6, 30, 37 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over McGee et al. in view of Jannarone (US Patent No. 6,289,330).

McGee et al. teach all the limitations of claim 1 upon which claims 4 and 6 depend, claim 16 upon which claim 30 depends, claim 36 upon which claim 37 depends and claim 48 upon which claim 59 depends. With regard to comparing a correlation coefficient to a lower threshold, as shown in claims 6, 30, 37 and 39, McGee et al. further teach deleting correlation coefficients below a predetermined threshold (col. 3, line 64 - col. 4, line 11; col. 23, lines 1-20). McGee et al. do not teach comparing the

correlation coefficient to an upper threshold, as shown in claims 4, 6, 30, 37 and 59. Jannarone teaches using correlation coefficients for identifying redundant features (col. 11, lines 19-32). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system for monitoring performance metrics, as taught by McGee et al., to include using correlation coefficients to identify redundant features, as taught by Jannarone, because redundant data would not have been saved.

6. Claims 9, 32 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over McGee et al. in view of Wagner (US Patent No. 5,600,379).

McGee et al. teach all the limitations of claim 1 upon which claim 9 depends, claim 16 upon which claim 32 depends and claim 48 upon which claim 55 depends. McGee et al. do not teach applying a re-sampling method to facilitate a comparison of two series of values, as shown in claims 9, 32 and 55. Wagner teaches resampling a signal (col. 4, lines 8-30). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system for performance metric monitoring, as taught by McGee et al., to include re-sampling, as taught by Wagner, because then the signal would have been re-aligned in phase (Wagner, col. 4, lines 8-30).

7. Claims 13, 33, 47 and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over McGee et al. in view of Rowe (US Patent No. 6,324,492).

McGee et al. teach all the limitations of claim 1 upon which claim 13 depends, claim 16 upon which claim 33 depends, claim 36 upon which claim 47 depends and claim 48 upon which claim 61 depends. McGee et al. do not teach applying a controlled

load to the server over a period of time, as shown in claims 13, 33, 47 and 61. Rowe teaches stress testing a server using client simulators (Abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify system for performance metric monitoring, as taught by McGee et al., to include client simulators, as taught by Rowe, because then the stress or load applied to the server would have been variable (Rowe, Abstract).

8. Claims 40 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over McGee in view of Domany et al. (US Patent No. 6,021,383).

McGee et al. teach all the limitations of claim 36 upon which claims 40 and 41 depend. McGee et al. do not teach a clustering algorithm to group performance metrics or generating a tree indicating similar performance metrics, as shown in claims 40 and 41. Domany et al. teach clustering data that is related (Abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify system for performance metric monitoring, as taught by McGee et al., to include clustering related data, as taught by Domany et al., because then categories of data would have been identified (col. 1, lines 15-36).

Allowable Subject Matter


9. Claims 25, 26 and 46 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. If a copy of a provisional application listed on the bottom portion of the accompanying Notice of References Cited (PTO-892) form is not included with this Office action and the PTO-892 has been annotated to indicate that the copy was not readily available, it is because the copy could not be readily obtained when the Office action was mailed. Should applicant desire a copy of such a provisional application, applicant should promptly request the copy from the Office of Public Records (OPR) in accordance with 37 CFR 1.14(a)(1)(iv), paying the required fee under 37 CFR 1.19(b)(1). If a copy is ordered from OPR, the shortened statutory period for reply to this Office action will not be reset under MPEP § 710.06 unless applicant can demonstrate a substantial delay by the Office in fulfilling the order for the copy of the provisional application. Where the applicant has been notified on the PTO-892 that a copy of the provisional application is not readily available, the provision of MPEP § 707.05(a) that a copy of the cited reference will be automatically furnished without charge does not apply.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manuel L. Barbee whose telephone number is 571-272-2212. The examiner can normally be reached on Monday-Friday from 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on 571-272-2216. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


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